

CLAIMS

1. A method of maintaining a machine part arranged in an interior space of a machine, where the interior space is kept at a first pressure and is separated from an environment having a second pressure via a load lock, the method characterized by:
transporting a machine part via the load lock out from the interior space; and
transporting via the load lock into the interior space, the machine part after being maintained or a separate replacement machine part.

2. A method according to claim 1, characterized by the machine part being transported via the load lock into the interior space after cleaning the machine part outside the interior space and transporting the machine part after being maintained via the load lock into the interior space.

3. A method according to claim 1, characterized in that the separate replacement machine part is transported via the load lock into the interior space and the separate replacement machine part is a clean version of the machine part and the separate replacement machine part is transported via the load lock into the interior space as a clean version of the machine part.

4. A method according to claim 1, where the machine part is connected to and disconnected from the machine via a connection system.

5. A method according claim 4, wherein the connection system self-aligns during connecting and disconnecting.

6. A method according to claim 1, wherein the machine part is a substrate table and characterized by displacing a substrate table with respect to a chuck by a displacement mechanism.

7. A method according to claim 6, wherein displacing a substrate table with respect to a chuck comprises:
moving at least one of a pin, that in a first position extends in a first direction

through the substrate table, and the substrate table in a second direction, which is substantially perpendicular to the first direction, when the pin is at a second position that does not extend through the substrate table; and

displacing the substrate table with respect to the chuck by moving the pin in the first direction.

8. A method according to claim 7, wherein the movement of the at least one of the pin and the substrate table in the second direction is a rotation.

9. A method according to claim 1, where the machine is a lithographic projection apparatus including projecting a beam of radiation on a substrate.

10. A method according to claim 9, wherein the transporting the machine part includes grasping at least one of a gripper arranged to grip and release a substrate and a substrate table arranged to support a substrate.

11. An assembly, comprising:

an apparatus within an interior space, where said interior space is kept at a first pressure and is separated from an environment having a second pressure; and

a load lock separating said interior space from said environment and constructed and arranged to transfer a machine part out of said interior space and constructed and arranged to receive and transfer one of said machine part after maintenance and a separate replacement machine part into said interior space, said load lock being constructed and arranged to maintain said first pressure when open to said interior space and to maintain said second pressure when open to said one of said machine part after maintenance and a separate replacement machine part, wherein said apparatus and said load lock are constructed and arranged to maintain said interior space at said first pressure when said load lock is open to said second pressure.

12. An assembly according to claim 11, wherein said apparatus is a lithographic projection apparatus comprising:

a radiation system constructed and arranged to provide a beam of radiation;

a support structure to support a patterning device, said patterning device

serving to pattern said beam according to a desired pattern;
a substrate table for holding a substrate; and
a projection system constructed and arranged to project said patterned beam onto a target portion of said substrate.

13. An assembly according to claim 11, further comprising:
an cleaning apparatus constructed and arranged to clean said machine part outside said interior space to render it as said machine part after maintenance that can be transported via said load lock into said interior space.

14. An assembly according to claim 11, where said separate replacement part is a clean version of said machine part that can be transported via said load lock into said interior space.

15. An assembly according to claim 11, further comprising:
a connection system constructed and arranged to connect and disconnect said machine part from said apparatus.

16. An assembly according claim 15, wherein said connection system is constructed and arranged to be self-aligning during connecting and disconnecting.

17. An assembly according to claim 11, wherein said machine part is a substrate table and further comprising a displacement mechanism to displace a substrate table with respect to a chuck.

18. A method according to claim 6, wherein the displacing the chuck by a displacement mechanism includes providing a displacement mechanism having
a pin, which in a first position can extend in a first direction through the substrate table, and that displaces the substrate table with respect to the chuck through movement of the pin in the first direction; and
a shifting mechanism moving at least one of the pin and the substrate table in a second direction, which is substantially perpendicular to the first direction, when the pin is at a second position that does not extend through the substrate table.

19. A method according to claim 18, where said movement of said at least one of the pin and said substrate table in said second direction is a rotation.

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